

SEQUENCE LISTING

<110> WHITE, JOHN
FERNANDES, ISABELLE

<120> NUCLEAR RECEPTOR TRANSCRIPTIONAL COREPRESSOR AND USES
THEREOF

<130> BER-003US1

<140> 10/529,512
<141> 2005-03-25

<150> PCT/CA03/01477
<151> 2003-09-25

<150> 60/413,602
<151> 2002-09-26

<160> 30

<170> PatentIn Ver. 3.3

<210> 1
<211> 1828
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (527)..(1825)

<400> 1
ccacgacaac ccactgcaag cagatccagc agctgcttcc tgtaatgcag gactccccag 60
gagcacccag gcatgggcag caacccctgc atgccattct ttttgggctc ccgagaacag 120
ggagataaac accaccatca tctgagagcc gggaaaggaa aggcgagggt gtgtagggcg 180
cacgaatgct ccgttgagag acgcggctt cggcaagaac tggattcgtg gcccacaag 240
ctcattcaact gtgtaggtcc cgttccctc tgtgcggcgg cccgcgggac cataagggt 300
taactcatat attaacccc cctccaaaaa ggtttgaaag tattcttcaa gggctgtttg 360
gacctgcatt attaaaagat ctcagtttat ttaaagactg tgaacctgaa agcatttctg 420
attggacttt tgatgaaaac tggatttctt gttgcttgag aagagataaa gtaaagacag 480
tccctgggtc tccgacccca atattccctt agtggccctt gagatc atg cag cga 535
Met Gln Arg
1

atg atc caa caa ttt gct gct gaa tat acc tca aaa aat agc tct act 583
Met Ile Gln Gln Phe Ala Ala Glu Tyr Thr Ser Lys Asn Ser Ser Thr
5 10 15

cag gac ccc agc cag ccc aat agc aca aag aac caa agc ctg ccg aaa Gln Asp Pro Ser Gln Pro Asn Ser Thr Lys Asn Gln Ser Leu Pro Lys 20 25 30 35	631
gca tct cca gtc acc acc tct ccc acg gct gca act act cag aac cct Ala Ser Pro Val Thr Thr Ser Pro Thr Ala Ala Thr Thr Gln Asn Pro 40 45 50	679
gtg ctc agc aaa ctt ctc atg gct gac caa gac tca cct ctg gac ctt Val Leu Ser Lys Leu Leu Met Ala Asp Gln Asp Ser Pro Leu Asp Leu 55 60 65	727
act gtc aga aag tct cag tca gaa cct agc gaa caa gac ggt gta ctt Thr Val Arg Lys Ser Gln Ser Glu Pro Ser Glu Gln Asp Gly Val Leu 70 75 80	775
gat ctg tcc act aag aaa agt cca tgt gct ggc agc act tcc ctg agc Asp Leu Ser Thr Lys Lys Ser Pro Cys Ala Gly Ser Thr Ser Leu Ser 85 90 95	823
cac tct cca ggc tgc tcc agt act caa ggg aac ggg cga cct ggg aga His Ser Pro Gly Cys Ser Ser Thr Gln Gly Asn Gly Arg Pro Gly Arg 100 105 110 115	871
ccc agc cag tac cgc cca gac gga ctt cgg agt ggt gat ggg gta cct Pro Ser Gln Tyr Arg Pro Asp Gly Leu Arg Ser Gly Asp Gly Val Pro 120 125 130	919
cca aga agc tta cag gat gga acc agg gaa ggt ttt gga cac tcc aca Pro Arg Ser Leu Gln Asp Gly Thr Arg Glu Gly Phe Gly His Ser Thr 135 140 145	967
tca ctc aaa gtt cca ctg gct cga tcc ctg cag att agt gaa gaa cta Ser Leu Lys Val Pro Leu Ala Arg Ser Leu Gln Ile Ser Glu Glu Leu 150 155 160	1015
ctg agc aga aac caa ttg tcc aca gct gcc agc ctt ggg cca tct gga Leu Ser Arg Asn Gln Leu Ser Thr Ala Ala Ser Leu Gly Pro Ser Gly 165 170 175	1063
tta cag aat cat gga caa cac tta ata tta tcc agg gaa gcc tct tgg Leu Gln Asn His Gly Gln His Leu Ile Leu Ser Arg Glu Ala Ser Trp 180 185 190 195	1111
gca aaa cca cat tac gag ttc aac ctc agc cgt atg aag ttc agg gga Ala Lys Pro His Tyr Glu Phe Asn Leu Ser Arg Met Lys Phe Arg Gly 200 205 210	1159
aat ggt gca ctc agc aac atc agt gac ctt cct ttt ctt gca gaa aac Asn Gly Ala Leu Ser Asn Ile Ser Asp Leu Pro Phe Leu Ala Glu Asn 215 220 225	1207
tct gcc ttt cca aaa atg gca ctt caa gca aaa caa gat gga aaa aag Ser Ala Phe Pro Lys Met Ala Leu Gln Ala Lys Gln Asp Gly Lys Lys 230 235 240	1255

gac gtg agc cat tca tct cct gta gat tta aag ata cca caa gtt cga	1303																																																																																																										
Asp Val Ser His Ser Ser Pro Val Asp Leu Lys Ile Pro Gln Val Arg																																																																																																											
245	250	255		gga atg gat ctt tct tgg gag tct cgc act ggt gat cag tac agc tat	1351	Gly Met Asp Leu Ser Trp Glu Ser Arg Thr Gly Asp Gln Tyr Ser Tyr		260	265	270	275	agc tct ttg gta atg ggt tca caa acg gag agc gcg ctt agt aaa aaa	1399	Ser Ser Leu Val Met Gly Ser Gln Thr Glu Ser Ala Leu Ser Lys Lys		280	285	290		tta agg gct att ctt cca aaa caa agt aga aaa agc atg tta gat gct	1447	Leu Arg Ala Ile Leu Pro Lys Gln Ser Arg Lys Ser Met Leu Asp Ala		295	300	305		ggg ccc gat tct tgg ggc tca gat gct gag cag tct acc cct gga cag	1495	Gly Pro Asp Ser Trp Gly Ser Asp Ala Glu Gln Ser Thr Pro Gly Gln		310	315	320		cca tat ccc aca tcg gat caa gaa gga gac cct ggc tcc aag cag cct	1543	Pro Tyr Pro Thr Ser Asp Gln Glu Gly Asp Pro Gly Ser Lys Gln Pro		325	330	335		cgg aag aaa aga ggg cgt tac aga cag tac aac agt gag ata ctg gag	1591	Arg Lys Lys Arg Gly Arg Tyr Arg Gln Tyr Asn Ser Glu Ile Leu Glu		340	345	350	355	gaa gca atc tca gtg gtt atg agt gga aaa atg agt gtt tcc aaa gct	1639	Glu Ala Ile Ser Val Val Met Ser Gly Lys Met Ser Val Ser Lys Ala		360	365	370		cag agt att tat ggg att ccc cac agt aca ctg gag tac aaa gta aag	1687	Gin Ser Ile Tyr Gly Ile Pro His Ser Thr Leu Glu Tyr Lys Val Lys		375	380	385		gag agg ctg ggc act ttg aaa aac cct cca aag aaa aag atg aaa tta	1735	Glu Arg Leu Gly Thr Leu Lys Asn Pro Pro Lys Lys Met Lys Leu		390	395	400		atg agg tcg gag ggg cca gat gtt tct gta aag att gaa tta gat ccc	1783	Met Arg Ser Glu Gly Pro Asp Val Ser Val Lys Ile Glu Leu Asp Pro		405	410	415		cag gga gag gca gca caa agt gca aat gaa tca aaa aac gag tag	1828	Gln Gly Glu Ala Ala Gln Ser Ala Asn Glu Ser Lys Asn Glu		420	425	430		<210> 2		<211> 433		<212> PRT		<213> Homo sapiens		<400> 2		Met Gln Arg Met Ile Gln Gln Phe Ala Ala Glu Tyr Thr Ser Lys Asn		1	5	10	15
255																																																																																																											
gga atg gat ctt tct tgg gag tct cgc act ggt gat cag tac agc tat	1351																																																																																																										
Gly Met Asp Leu Ser Trp Glu Ser Arg Thr Gly Asp Gln Tyr Ser Tyr																																																																																																											
260	265	270	275	agc tct ttg gta atg ggt tca caa acg gag agc gcg ctt agt aaa aaa	1399	Ser Ser Leu Val Met Gly Ser Gln Thr Glu Ser Ala Leu Ser Lys Lys		280	285	290		tta agg gct att ctt cca aaa caa agt aga aaa agc atg tta gat gct	1447	Leu Arg Ala Ile Leu Pro Lys Gln Ser Arg Lys Ser Met Leu Asp Ala		295	300	305		ggg ccc gat tct tgg ggc tca gat gct gag cag tct acc cct gga cag	1495	Gly Pro Asp Ser Trp Gly Ser Asp Ala Glu Gln Ser Thr Pro Gly Gln		310	315	320		cca tat ccc aca tcg gat caa gaa gga gac cct ggc tcc aag cag cct	1543	Pro Tyr Pro Thr Ser Asp Gln Glu Gly Asp Pro Gly Ser Lys Gln Pro		325	330	335		cgg aag aaa aga ggg cgt tac aga cag tac aac agt gag ata ctg gag	1591	Arg Lys Lys Arg Gly Arg Tyr Arg Gln Tyr Asn Ser Glu Ile Leu Glu		340	345	350	355	gaa gca atc tca gtg gtt atg agt gga aaa atg agt gtt tcc aaa gct	1639	Glu Ala Ile Ser Val Val Met Ser Gly Lys Met Ser Val Ser Lys Ala		360	365	370		cag agt att tat ggg att ccc cac agt aca ctg gag tac aaa gta aag	1687	Gin Ser Ile Tyr Gly Ile Pro His Ser Thr Leu Glu Tyr Lys Val Lys		375	380	385		gag agg ctg ggc act ttg aaa aac cct cca aag aaa aag atg aaa tta	1735	Glu Arg Leu Gly Thr Leu Lys Asn Pro Pro Lys Lys Met Lys Leu		390	395	400		atg agg tcg gag ggg cca gat gtt tct gta aag att gaa tta gat ccc	1783	Met Arg Ser Glu Gly Pro Asp Val Ser Val Lys Ile Glu Leu Asp Pro		405	410	415		cag gga gag gca gca caa agt gca aat gaa tca aaa aac gag tag	1828	Gln Gly Glu Ala Ala Gln Ser Ala Asn Glu Ser Lys Asn Glu		420	425	430		<210> 2		<211> 433		<212> PRT		<213> Homo sapiens		<400> 2		Met Gln Arg Met Ile Gln Gln Phe Ala Ala Glu Tyr Thr Ser Lys Asn		1	5	10	15								
270	275																																																																																																										
agc tct ttg gta atg ggt tca caa acg gag agc gcg ctt agt aaa aaa	1399																																																																																																										
Ser Ser Leu Val Met Gly Ser Gln Thr Glu Ser Ala Leu Ser Lys Lys																																																																																																											
280	285	290		tta agg gct att ctt cca aaa caa agt aga aaa agc atg tta gat gct	1447	Leu Arg Ala Ile Leu Pro Lys Gln Ser Arg Lys Ser Met Leu Asp Ala		295	300	305		ggg ccc gat tct tgg ggc tca gat gct gag cag tct acc cct gga cag	1495	Gly Pro Asp Ser Trp Gly Ser Asp Ala Glu Gln Ser Thr Pro Gly Gln		310	315	320		cca tat ccc aca tcg gat caa gaa gga gac cct ggc tcc aag cag cct	1543	Pro Tyr Pro Thr Ser Asp Gln Glu Gly Asp Pro Gly Ser Lys Gln Pro		325	330	335		cgg aag aaa aga ggg cgt tac aga cag tac aac agt gag ata ctg gag	1591	Arg Lys Lys Arg Gly Arg Tyr Arg Gln Tyr Asn Ser Glu Ile Leu Glu		340	345	350	355	gaa gca atc tca gtg gtt atg agt gga aaa atg agt gtt tcc aaa gct	1639	Glu Ala Ile Ser Val Val Met Ser Gly Lys Met Ser Val Ser Lys Ala		360	365	370		cag agt att tat ggg att ccc cac agt aca ctg gag tac aaa gta aag	1687	Gin Ser Ile Tyr Gly Ile Pro His Ser Thr Leu Glu Tyr Lys Val Lys		375	380	385		gag agg ctg ggc act ttg aaa aac cct cca aag aaa aag atg aaa tta	1735	Glu Arg Leu Gly Thr Leu Lys Asn Pro Pro Lys Lys Met Lys Leu		390	395	400		atg agg tcg gag ggg cca gat gtt tct gta aag att gaa tta gat ccc	1783	Met Arg Ser Glu Gly Pro Asp Val Ser Val Lys Ile Glu Leu Asp Pro		405	410	415		cag gga gag gca gca caa agt gca aat gaa tca aaa aac gag tag	1828	Gln Gly Glu Ala Ala Gln Ser Ala Asn Glu Ser Lys Asn Glu		420	425	430		<210> 2		<211> 433		<212> PRT		<213> Homo sapiens		<400> 2		Met Gln Arg Met Ile Gln Gln Phe Ala Ala Glu Tyr Thr Ser Lys Asn		1	5	10	15																
290																																																																																																											
tta agg gct att ctt cca aaa caa agt aga aaa agc atg tta gat gct	1447																																																																																																										
Leu Arg Ala Ile Leu Pro Lys Gln Ser Arg Lys Ser Met Leu Asp Ala																																																																																																											
295	300	305		ggg ccc gat tct tgg ggc tca gat gct gag cag tct acc cct gga cag	1495	Gly Pro Asp Ser Trp Gly Ser Asp Ala Glu Gln Ser Thr Pro Gly Gln		310	315	320		cca tat ccc aca tcg gat caa gaa gga gac cct ggc tcc aag cag cct	1543	Pro Tyr Pro Thr Ser Asp Gln Glu Gly Asp Pro Gly Ser Lys Gln Pro		325	330	335		cgg aag aaa aga ggg cgt tac aga cag tac aac agt gag ata ctg gag	1591	Arg Lys Lys Arg Gly Arg Tyr Arg Gln Tyr Asn Ser Glu Ile Leu Glu		340	345	350	355	gaa gca atc tca gtg gtt atg agt gga aaa atg agt gtt tcc aaa gct	1639	Glu Ala Ile Ser Val Val Met Ser Gly Lys Met Ser Val Ser Lys Ala		360	365	370		cag agt att tat ggg att ccc cac agt aca ctg gag tac aaa gta aag	1687	Gin Ser Ile Tyr Gly Ile Pro His Ser Thr Leu Glu Tyr Lys Val Lys		375	380	385		gag agg ctg ggc act ttg aaa aac cct cca aag aaa aag atg aaa tta	1735	Glu Arg Leu Gly Thr Leu Lys Asn Pro Pro Lys Lys Met Lys Leu		390	395	400		atg agg tcg gag ggg cca gat gtt tct gta aag att gaa tta gat ccc	1783	Met Arg Ser Glu Gly Pro Asp Val Ser Val Lys Ile Glu Leu Asp Pro		405	410	415		cag gga gag gca gca caa agt gca aat gaa tca aaa aac gag tag	1828	Gln Gly Glu Ala Ala Gln Ser Ala Asn Glu Ser Lys Asn Glu		420	425	430		<210> 2		<211> 433		<212> PRT		<213> Homo sapiens		<400> 2		Met Gln Arg Met Ile Gln Gln Phe Ala Ala Glu Tyr Thr Ser Lys Asn		1	5	10	15																								
305																																																																																																											
ggg ccc gat tct tgg ggc tca gat gct gag cag tct acc cct gga cag	1495																																																																																																										
Gly Pro Asp Ser Trp Gly Ser Asp Ala Glu Gln Ser Thr Pro Gly Gln																																																																																																											
310	315	320		cca tat ccc aca tcg gat caa gaa gga gac cct ggc tcc aag cag cct	1543	Pro Tyr Pro Thr Ser Asp Gln Glu Gly Asp Pro Gly Ser Lys Gln Pro		325	330	335		cgg aag aaa aga ggg cgt tac aga cag tac aac agt gag ata ctg gag	1591	Arg Lys Lys Arg Gly Arg Tyr Arg Gln Tyr Asn Ser Glu Ile Leu Glu		340	345	350	355	gaa gca atc tca gtg gtt atg agt gga aaa atg agt gtt tcc aaa gct	1639	Glu Ala Ile Ser Val Val Met Ser Gly Lys Met Ser Val Ser Lys Ala		360	365	370		cag agt att tat ggg att ccc cac agt aca ctg gag tac aaa gta aag	1687	Gin Ser Ile Tyr Gly Ile Pro His Ser Thr Leu Glu Tyr Lys Val Lys		375	380	385		gag agg ctg ggc act ttg aaa aac cct cca aag aaa aag atg aaa tta	1735	Glu Arg Leu Gly Thr Leu Lys Asn Pro Pro Lys Lys Met Lys Leu		390	395	400		atg agg tcg gag ggg cca gat gtt tct gta aag att gaa tta gat ccc	1783	Met Arg Ser Glu Gly Pro Asp Val Ser Val Lys Ile Glu Leu Asp Pro		405	410	415		cag gga gag gca gca caa agt gca aat gaa tca aaa aac gag tag	1828	Gln Gly Glu Ala Ala Gln Ser Ala Asn Glu Ser Lys Asn Glu		420	425	430		<210> 2		<211> 433		<212> PRT		<213> Homo sapiens		<400> 2		Met Gln Arg Met Ile Gln Gln Phe Ala Ala Glu Tyr Thr Ser Lys Asn		1	5	10	15																																
320																																																																																																											
cca tat ccc aca tcg gat caa gaa gga gac cct ggc tcc aag cag cct	1543																																																																																																										
Pro Tyr Pro Thr Ser Asp Gln Glu Gly Asp Pro Gly Ser Lys Gln Pro																																																																																																											
325	330	335		cgg aag aaa aga ggg cgt tac aga cag tac aac agt gag ata ctg gag	1591	Arg Lys Lys Arg Gly Arg Tyr Arg Gln Tyr Asn Ser Glu Ile Leu Glu		340	345	350	355	gaa gca atc tca gtg gtt atg agt gga aaa atg agt gtt tcc aaa gct	1639	Glu Ala Ile Ser Val Val Met Ser Gly Lys Met Ser Val Ser Lys Ala		360	365	370		cag agt att tat ggg att ccc cac agt aca ctg gag tac aaa gta aag	1687	Gin Ser Ile Tyr Gly Ile Pro His Ser Thr Leu Glu Tyr Lys Val Lys		375	380	385		gag agg ctg ggc act ttg aaa aac cct cca aag aaa aag atg aaa tta	1735	Glu Arg Leu Gly Thr Leu Lys Asn Pro Pro Lys Lys Met Lys Leu		390	395	400		atg agg tcg gag ggg cca gat gtt tct gta aag att gaa tta gat ccc	1783	Met Arg Ser Glu Gly Pro Asp Val Ser Val Lys Ile Glu Leu Asp Pro		405	410	415		cag gga gag gca gca caa agt gca aat gaa tca aaa aac gag tag	1828	Gln Gly Glu Ala Ala Gln Ser Ala Asn Glu Ser Lys Asn Glu		420	425	430		<210> 2		<211> 433		<212> PRT		<213> Homo sapiens		<400> 2		Met Gln Arg Met Ile Gln Gln Phe Ala Ala Glu Tyr Thr Ser Lys Asn		1	5	10	15																																								
335																																																																																																											
cgg aag aaa aga ggg cgt tac aga cag tac aac agt gag ata ctg gag	1591																																																																																																										
Arg Lys Lys Arg Gly Arg Tyr Arg Gln Tyr Asn Ser Glu Ile Leu Glu																																																																																																											
340	345	350	355	gaa gca atc tca gtg gtt atg agt gga aaa atg agt gtt tcc aaa gct	1639	Glu Ala Ile Ser Val Val Met Ser Gly Lys Met Ser Val Ser Lys Ala		360	365	370		cag agt att tat ggg att ccc cac agt aca ctg gag tac aaa gta aag	1687	Gin Ser Ile Tyr Gly Ile Pro His Ser Thr Leu Glu Tyr Lys Val Lys		375	380	385		gag agg ctg ggc act ttg aaa aac cct cca aag aaa aag atg aaa tta	1735	Glu Arg Leu Gly Thr Leu Lys Asn Pro Pro Lys Lys Met Lys Leu		390	395	400		atg agg tcg gag ggg cca gat gtt tct gta aag att gaa tta gat ccc	1783	Met Arg Ser Glu Gly Pro Asp Val Ser Val Lys Ile Glu Leu Asp Pro		405	410	415		cag gga gag gca gca caa agt gca aat gaa tca aaa aac gag tag	1828	Gln Gly Glu Ala Ala Gln Ser Ala Asn Glu Ser Lys Asn Glu		420	425	430		<210> 2		<211> 433		<212> PRT		<213> Homo sapiens		<400> 2		Met Gln Arg Met Ile Gln Gln Phe Ala Ala Glu Tyr Thr Ser Lys Asn		1	5	10	15																																																
350	355																																																																																																										
gaa gca atc tca gtg gtt atg agt gga aaa atg agt gtt tcc aaa gct	1639																																																																																																										
Glu Ala Ile Ser Val Val Met Ser Gly Lys Met Ser Val Ser Lys Ala																																																																																																											
360	365	370		cag agt att tat ggg att ccc cac agt aca ctg gag tac aaa gta aag	1687	Gin Ser Ile Tyr Gly Ile Pro His Ser Thr Leu Glu Tyr Lys Val Lys		375	380	385		gag agg ctg ggc act ttg aaa aac cct cca aag aaa aag atg aaa tta	1735	Glu Arg Leu Gly Thr Leu Lys Asn Pro Pro Lys Lys Met Lys Leu		390	395	400		atg agg tcg gag ggg cca gat gtt tct gta aag att gaa tta gat ccc	1783	Met Arg Ser Glu Gly Pro Asp Val Ser Val Lys Ile Glu Leu Asp Pro		405	410	415		cag gga gag gca gca caa agt gca aat gaa tca aaa aac gag tag	1828	Gln Gly Glu Ala Ala Gln Ser Ala Asn Glu Ser Lys Asn Glu		420	425	430		<210> 2		<211> 433		<212> PRT		<213> Homo sapiens		<400> 2		Met Gln Arg Met Ile Gln Gln Phe Ala Ala Glu Tyr Thr Ser Lys Asn		1	5	10	15																																																								
370																																																																																																											
cag agt att tat ggg att ccc cac agt aca ctg gag tac aaa gta aag	1687																																																																																																										
Gin Ser Ile Tyr Gly Ile Pro His Ser Thr Leu Glu Tyr Lys Val Lys																																																																																																											
375	380	385		gag agg ctg ggc act ttg aaa aac cct cca aag aaa aag atg aaa tta	1735	Glu Arg Leu Gly Thr Leu Lys Asn Pro Pro Lys Lys Met Lys Leu		390	395	400		atg agg tcg gag ggg cca gat gtt tct gta aag att gaa tta gat ccc	1783	Met Arg Ser Glu Gly Pro Asp Val Ser Val Lys Ile Glu Leu Asp Pro		405	410	415		cag gga gag gca gca caa agt gca aat gaa tca aaa aac gag tag	1828	Gln Gly Glu Ala Ala Gln Ser Ala Asn Glu Ser Lys Asn Glu		420	425	430		<210> 2		<211> 433		<212> PRT		<213> Homo sapiens		<400> 2		Met Gln Arg Met Ile Gln Gln Phe Ala Ala Glu Tyr Thr Ser Lys Asn		1	5	10	15																																																																
385																																																																																																											
gag agg ctg ggc act ttg aaa aac cct cca aag aaa aag atg aaa tta	1735																																																																																																										
Glu Arg Leu Gly Thr Leu Lys Asn Pro Pro Lys Lys Met Lys Leu																																																																																																											
390	395	400		atg agg tcg gag ggg cca gat gtt tct gta aag att gaa tta gat ccc	1783	Met Arg Ser Glu Gly Pro Asp Val Ser Val Lys Ile Glu Leu Asp Pro		405	410	415		cag gga gag gca gca caa agt gca aat gaa tca aaa aac gag tag	1828	Gln Gly Glu Ala Ala Gln Ser Ala Asn Glu Ser Lys Asn Glu		420	425	430		<210> 2		<211> 433		<212> PRT		<213> Homo sapiens		<400> 2		Met Gln Arg Met Ile Gln Gln Phe Ala Ala Glu Tyr Thr Ser Lys Asn		1	5	10	15																																																																								
400																																																																																																											
atg agg tcg gag ggg cca gat gtt tct gta aag att gaa tta gat ccc	1783																																																																																																										
Met Arg Ser Glu Gly Pro Asp Val Ser Val Lys Ile Glu Leu Asp Pro																																																																																																											
405	410	415		cag gga gag gca gca caa agt gca aat gaa tca aaa aac gag tag	1828	Gln Gly Glu Ala Ala Gln Ser Ala Asn Glu Ser Lys Asn Glu		420	425	430		<210> 2		<211> 433		<212> PRT		<213> Homo sapiens		<400> 2		Met Gln Arg Met Ile Gln Gln Phe Ala Ala Glu Tyr Thr Ser Lys Asn		1	5	10	15																																																																																
415																																																																																																											
cag gga gag gca gca caa agt gca aat gaa tca aaa aac gag tag	1828																																																																																																										
Gln Gly Glu Ala Ala Gln Ser Ala Asn Glu Ser Lys Asn Glu																																																																																																											
420	425	430		<210> 2		<211> 433		<212> PRT		<213> Homo sapiens		<400> 2		Met Gln Arg Met Ile Gln Gln Phe Ala Ala Glu Tyr Thr Ser Lys Asn		1	5	10	15																																																																																								
430																																																																																																											
<210> 2																																																																																																											
<211> 433																																																																																																											
<212> PRT																																																																																																											
<213> Homo sapiens																																																																																																											
<400> 2																																																																																																											
Met Gln Arg Met Ile Gln Gln Phe Ala Ala Glu Tyr Thr Ser Lys Asn																																																																																																											
1	5	10	15																																																																																																								
10	15																																																																																																										

Ser Ser Thr Gln Asp Pro Ser Gln Pro Asn Ser Thr Lys Asn Gln Ser
 20 25 30

Leu Pro Lys Ala Ser Pro Val Thr Thr Ser Pro Thr Ala Ala Thr Thr
 35 40 45

Gln Asn Pro Val Leu Ser Lys Leu Leu Met Ala Asp Gln Asp Ser Pro
 50 55 60

Leu Asp Leu Thr Val Arg Lys Ser Gln Ser Glu Pro Ser Glu Gln Asp
 65 70 75 80

Gly Val Leu Asp Leu Ser Thr Lys Lys Ser Pro Cys Ala Gly Ser Thr
 85 90 95

Ser Leu Ser His Ser Pro Gly Cys Ser Ser Thr Gln Gly Asn Gly Arg
 100 105 110

Pro Gly Arg Pro Ser Gln Tyr Arg Pro Asp Gly Leu Arg Ser Gly Asp
 115 120 125

Gly Val Pro Pro Arg Ser Leu Gln Asp Gly Thr Arg Glu Gly Phe Gly
 130 135 140

His Ser Thr Ser Leu Lys Val Pro Leu Ala Arg Ser Leu Gln Ile Ser
 145 150 155 160

Glu Glu Leu Leu Ser Arg Asn Gln Leu Ser Thr Ala Ala Ser Leu Gly
 165 170 175

Pro Ser Gly Leu Gln Asn His Gly Gln His Leu Ile Leu Ser Arg Glu
 180 185 190

Ala Ser Trp Ala Lys Pro His Tyr Glu Phe Asn Leu Ser Arg Met Lys
 195 200 205

Phe Arg Gly Asn Gly Ala Leu Ser Asn Ile Ser Asp Leu Pro Phe Leu
 210 215 220

Ala Glu Asn Ser Ala Phe Pro Lys Met Ala Leu Gin Ala Lys Gln Asp
 225 230 235 240

Gly Lys Lys Asp Val Ser His Ser Ser Pro Val Asp Leu Lys Ile Pro
 245 250 255

Gln Val Arg Gly Met Asp Leu Ser Trp Glu Ser Arg Thr Gly Asp Gln
 260 265 270

Tyr Ser Tyr Ser Ser Leu Val Met Gly Ser Gln Thr Glu Ser Ala Leu
 275 280 285

Ser Lys Lys Leu Arg Ala Ile Leu Pro Lys Gln Ser Arg Lys Ser Met
 290 295 300

Leu Asp Ala Gly Pro Asp Ser Trp Gly Ser Asp Ala Glu Gln Ser Thr
 305 310 315 320

Pro Gly Gln Pro Tyr Pro Thr Ser Asp Gln Glu Gly Asp Pro Gly Ser
 325 330 335

Lys Gln Pro Arg Lys Lys Arg Gly Arg Tyr Arg Gln Tyr Asn Ser Glu
 340 345 350

Ile Leu Glu Glu Ala Ile Ser Val Val Met Ser Gly Lys Met Ser Val
 355 360 365

Ser Lys Ala Gln Ser Ile Tyr Gly Ile Pro His Ser Thr Leu Glu Tyr
 370 375 380

Lys Val Lys Glu Arg Leu Gly Thr Leu Lys Asn Pro Pro Lys Lys Lys
 385 390 395 400

Met Lys Leu Met Arg Ser Glu Gly Pro Asp Val Ser Val Lys Ile Glu
 405 410 415

Leu Asp Pro Gln Gly Glu Ala Ala Gln Ser Ala Asn Glu Ser Lys Asn
 420 425 430

Glu

<210> 3

<211> 60

<212> PRT

<213> Homo sapiens

<400> 3

Lys Gln Pro Lys Lys Lys Arg Gly Arg Tyr Arg Gln Tyr Asn Ser Glu
 1 5 10 15

Ile Leu Glu Glu Ala Ile Ser Val Val Met Ser Gly Lys Met Ser Val
 20 25 30

Ser Lys Ala Gln Ser Ile Tyr Gly Ile Pro His Ser Thr Leu Glu Tyr
 35 40 45

Lys Val Lys Glu Arg Leu Gly Thr Leu Lys Asn Pro
 50 55 60

<210> 4

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 4

Gln Asp Pro Ser Gln Pro Asn Ser Thr Lys Asn Gln Ser Leu Pro Lys
 1 5 10 15

Ala

<210> 5		
<211> 30		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Description of Artificial Sequence: Synthetic primer		
<400> 5		
ccggaaattcc ggatgaccat gaccctccac		30
<210> 6		
<211> 31		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Description of Artificial Sequence: Synthetic primer		
<400> 6		
cgggatcccg tcaaagggtgg acctgatcat g		31
<210> 7		
<211> 40		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Description of Artificial Sequence: Synthetic primer		
<400> 7		
ccggaaattcc ggcccgggca tgagacagtc cctgggtctc		40
<210> 8		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Description of Artificial Sequence: Synthetic primer		
<400> 8		
ttcttgagg tacccatca		20

<210> 9
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 9
cgcgatccg cgatgcagcg aatgatccaa

30

<210> 10
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 10
ggaattccct actcgaaaa tgattcatt

29

<210> 11
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 11
ctagctagcc accatgcagc gaatgatcca a

31

<210> 12
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 12
ctagctagcc gctcgaaaa tgattcatt

29

<210> 13
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 13
cggaattcca gcgaatgatc caacaa

26

<210> 14
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 14
cgcggatccg cgctactcgt ttttgattc att

33

<210> 15
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide motif sequence

<400> 15
Pro Leu Asp Leu Thr Val Arg
1 5

<210> 16
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide motif sequence

<400> 16
Val Leu Asp Leu Ser Thr Lys
1 5

<210> 17
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 17
Leu Ser Lys Ala Ala
1 5

<210> 18
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<220>
<221> MOD_RES
<222> (2)
<223> variable amino acid

<220>
<221> MOD_RES
<222> (4)
<223> variable amino acid

<220>
<221> MOD_RES
<222> (6)
<223> variable amino acid

<220>
<221> MOD_RES
<222> (8)
<223> variable amino acid

<400> 18
Leu Xaa Leu Xaa Leu Xaa Ile Xaa Leu
1 5

<210> 19
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 19
Leu Ser Lys Leu Leu
1 5

<210> 20
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide motif sequence

<400> 20
Pro Arg Lys Lys Arg Gly Arg
1 5

<210> 21
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide motif sequence

<220>
<221> MOD_RES
<222> (5)
<223> Ser or Thr

<220>
<221> MOD_RES
<222> (6)
<223> variable amino acid

<220>
<221> MOD_RES
<222> (7)
<223> Arg or Lys

<400> 21
Pro Leu Asp Leu Xaa Xaa Xaa
1 5

<210> 22
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide motif sequence

<220>
<221> MOD_RES
<222> (2)
<223> variable amino acid

<220>
<221> MOD_RES
<222> (6)..(7)
<223> variable amino acid

<400> 22
 Pro Xaa Leu Asp Leu Xaa Xaa Arg
 1 5

<210> 23
 <211> 60
 <212> PRT
 <213> Drosophila melanogaster

<400> 23
 Glu Gly Ile Glu Leu Ser Arg Ser Asn Pro Thr Pro Trp Ser Glu Asp
 1 5 10 15

Ala Met Asn Glu Ala Leu Asn Ser Val Arg Leu Gly Gln Met Ser Ile
 20 25 30

Asn Gln Ala Ala Ile His Tyr Asn Leu Pro Tyr Ser Ser Leu Tyr Gly
 35 40 45

Arg Phe Lys Arg Gly Lys Tyr Asp Val Val Ala Asn
 50 55 60

<210> 24
 <211> 60
 <212> PRT
 <213> Drosophila melanogaster

<400> 24
 Lys Gly Thr Arg Pro Lys Arg Cys Lys Tyr Arg Asn Tyr Asp Arg Asp
 1 5 10 15

Ser Leu Val Glu Ala Val Lys Ala Val Gln Arg Gly Glu Met Ser Val
 20 25 30

His Arg Ala Gly Ser Tyr Tyr Gly Val Pro His Ser Thr Leu Glu Tyr
 35 40 45

Lys Val Lys Glu Arg His Leu Met Arg Pro Arg Lys
 50 55 60

<210> 25
 <211> 60
 <212> PRT
 <213> Caenorhabditis elegans

<400> 25
 Lys Arg Ser Arg Pro Lys Arg Gly Gln Tyr Arg Lys Tyr Asp Lys Asn
 1 5 10 15

Ala Leu Asp Glu Ala Val Arg Ser Val Arg Arg Gly Glu Met Thr Val
 20 25 30

His Arg Ala Gly Ser Phe Phe Gly Val Pro His Ser Thr Leu Glu Tyr
 35 40 45

Lys Val Lys Glu Arg Asn Leu Met Arg Lys Lys Lys
 50 55 60

<210> 26
 <211> 60
 <212> PRT
 <213> Apis mellifera

<400> 26
 Lys Gly Thr Arg Pro Lys Arg Gly Lys Tyr Arg Asn Tyr Asp Arg Asp
 1 5 10 15

Ser Leu Val Glu Ala Val Arg Ala Val Gln Arg Gly Glu Met Ser Val
 20 25 30

His Arg Ala Gly Ser Tyr Tyr Gly Val Pro His Ser Thr Leu Phe Tyr
 35 40 45

Lys Val Lys Glu Arg His Leu Met Arg Pro Arg Lys
 50 55 60

<210> 27
 <211> 60
 <212> PRT
 <213> Apis mellifera

<400> 27
 Val Pro Val Val Gly Ala Gly Gly Arg Arg Ala Tyr Thr Glu Glu
 1 5 10 15

Glu Leu Gln Ala Ala Leu Arg Asp Ile Gln Ser Gly Lys Leu Gly Thr
 20 25 30

Arg Arg Ala Ala Val Ile Tyr Gly Ile Pro Arg Ser Thr Leu Arg Asn
 35 40 45

Lys Val Tyr Lys Leu Ala Met Glu Arg Glu Arg Asp
 50 55 60

<210> 28
 <211> 60
 <212> PRT
 <213> Drosophila melanogaster

<400> 28
 Ser Gly Glu Lys Gly Gly Phe Asn Gly Pro Lys Ala Trp Thr Gln Asp
 1 5 10 15

Asp Met Asn Ser Ala Leu Asp Ala Leu Lys Asn Gln Asn Met Ser Leu
 20 25 30

Thr Lys Ala Ser Ala Ile Tyr Gly Ile Pro Ser Thr Thr Leu Trp Gln
 35 40 45

Arg Ala His Arg Met Gly Ile Glu Thr Pro Lys Lys
50 55 60

<210> 29
<211> 60
<212> PRT
<213> Drosophila melanogaster

<400> 29
Ile Glu Thr Pro Lys Lys Glu Gly Gly Thr Lys Ser Trp Asn Glu Asp
1 5 10 15

Ala Leu Gln Asn Ala Leu Glu Ala Leu Arg Ser Gly Gln Ile Ser Ala
20 25 30

Asn Lys Ala Ser Lys Ala Phe Gly Ile Pro Ser Ser Thr Leu Tyr Lys
35 40 45

Ile Ala Arg Arg Glu Gly Ile Arg Leu Ala Ala Pro
50 55 60

<210> 30
<211> 60
<212> PRT
<213> Drosophila melanogaster

<400> 30
Arg Leu Ala Ala Pro Phe Asn Ala Ala Pro Thr Thr Trp Thr Pro Glu
1 5 10 15

Asp Leu Glu Arg Ala Leu Glu Ala Ile Arg Ala Gly Asn Thr Ser Val
20 25 30

Gln Lys Ala Ser Ala Glu Phe Gly Ile Pro Thr Gly Thr Leu Tyr Gly
35 40 45

Arg Cys Lys Arg Glu Gly Ile Glu Leu Ser Arg Ser
50 55 60